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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/549,401
	Filing Date	September 13, 2005
	First Named Inventor	Brian J. Daniels
	Art Unit	Unknown
	Examiner Name	Unknown
Total Number of Pages in This Submission		Attorney Docket Number H0006041.70974-US

ENCLOSURES (Check all that apply)		
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm Name	Wells St. John P.S.	
Signature	<i>Jennifer J. Taylor</i>	
Printed name	Jennifer J. Taylor, Ph.D.	
Date	June 12, 2006	Reg. No. 48,711

CERTIFICATE OF TRANSMISSION/MAILING			
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This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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EV850819276

Inventor: Brian J. Daniels et al.

Title: Copper-Containing PVD Targets and Methods for Their Manufacture

Assignee: Honeywell International Inc.

INFORMATION DISCLOSURE STATEMENT

References – See Attached Form PTO-1449

The attached form PTO-1449 is submitted in compliance with 37 CFR §1.56. No admission is made regarding whether any of the submitted references is prior art. Copies of the references are attached.

Respectfully submitted,

Dated: June 12, 2006

By: Jennifer J. Taylor
Jennifer J. Taylor, Ph.D.
Reg. No. 48,711

Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. H0006041.70974 US		SERIAL NO. 10/549,401	
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT Brian J. Daniels et al.			
				FILING DATE September 13, 2005		GROUP Unknown	
U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Sub- class	Filing Date If Appropriate
	AA	3,963,934	06-1976	Ormrod			
	AB	4,132,614	01-1979	Cuomo et al.			
	AC	4,149,907	04-1979	Wronski et al.			
	AD	4,159,909	07-1979	Wilson			
	AE	4,198,283	04-1980	Class et al.			
	AF	4,209,375	06-1980	Gates et al.			
	AG	4,385,979	05-1983	Pierce et al.			
	AH	4,545,882	10-1985	McKelvey			
	AI	4,629,859	12-1986	Reddy			
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Sub- class	Translation
							Yes No
	AM	0335383 A2	10-1989	EPO			
	AN	0626722 A1	11-1994	EPO			
	AO	85104006 A	10-1986	CN			
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR		Lucke, K. et al., "Physical Metallurgy Principles" 2nd ed., 1973, p. 298.				
	AS		Phillips, V.A. et al., "The Effect of Certain Solute Elements on the Recrystallization of Copper", Journ. of Institute of Metals, Vol. 81, 1952-53, pp. 185-208.				
	AT		Brizzolara et al., "Low Energy Sputtering of Eutectic Ag/Cu Alloys", Nuclear Instruments and Methods in Physics Research B26, 1987, pp. 528-531.				
EXAMINER				DATE CONSIDERED			
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>							

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*Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date If Appropriate
	AA	5,242,566	09-1993	Parker			
	AB	5,268,236	12-1993	Dumont et al.			
	AC	5,282,943	02-1994	Lannutti et al.			
	AD	5,282,946	02-1994	Kinoshita et al.			
	AE	5,336,386	08-1994	Marx et al.			
	AF	5,397,050	03-1995	Mueller			
	AG	4,189,084	02-1980	Johnson et al.			
	AH	5,490,914	02-1996	Hurwitt et al.			

FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Sub-class	Translation	
							Yes	No
	AM	02301585	12/13/90	Japan				
	AN	05078195	3/30/93	Japan				
	AO	06081138	01/03/94	Japan				
	AP	09249967	09/22/97	Japan				
	AQ	10287939	10/27/98	Japan				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
	AR		Cabral, C. et al., "Preparation of Low Resistivity Cu-1 at. %Cr Thin Films by Magnetron Sputtering", J. Vac. Sci. Technol. A 10(4), Jul/Aug 1992, pp. 1706-1711.
	AS		Foster, N., "Composition and Structure of Sputtered Films of Ferroelectric Niobates", J. of Vac. Sci. and Tech., Vol. 8, No. 1, (1971), pp. 251-255.
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U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date If Appropriate
	AA	6,010,583	01/00	Annavarapu et al.			
	AB	6,028,003	02/00	Frisa et al.			
	AC	6,039,855	03/00	Wollenberg			
	AD	6,042,752	03/00	Mitsui			
	AE	6,068,742	05/00	Daxinger et al.			
	AF	6,086,735	07/00	Gilman et al.			
	AG	5,972,192	10-1999	Dubin et al.			
	AH	4,786,469	11-1988	Weber et al.			
	AI	5,312,790	5-1994	Sengupta et al.			
	AJ	6,093,966	07-2000	Venkatraman et al.			

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub-class	Translation	
							Yes	No
	AM	61084389	4/28/86	Japan				
	AN	61113740	5/31/86	Japan				
	AO	62127438	6/9/87	Japan				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)

	AR	Harper, J. et al., "Materials Issues in Copper Interconnections", MRS Bulletin, Aug. 1994, pp. 23-29.
	AS	Igarashi, Y. et al., "Electromigration Properties of Copper-Zirconium Alloy Interconnects", J. Vac. Sci. Technol. B 16(5), Sep/Oct. 1998, pp. 2745-2750.
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*Examiner Initial		Document Number	Date	Name	Class	Sub- class	Filing Date If Appropriate
	AA	4,676,827	06-1987	Hosoda et al.			
	AB	4,814,053	03-1989	Shimokawato			
	AC	4,986,856	01-1991	Tanigawa et al.			
	AD	5,023,698	06-1991	Kobayashi et al.			
	AE	5,066,617	11-1991	Tanemoto et al.			
	AF	5,077,005	12-1991	Kato			
	AG	5,314,651	05-1994	Kulwicki			
	AH	5,719,447	02-1998	Gardner			
	AI	5,833,820	11-1998	Dubin			
	AJ	5,435,826	07-1995	Sakakibara et al.			
	AK	5,895,562	04-1999	Dubin			

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		Document Number	Date	Country	Class	Sub- class	Translation
							Yes No
	AM	63235442	9/30/88	Japan			
	AN	363033174	02/12/88	Japan			
	AO	WO 00/73531 A2	12/7/00	PCT			

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
	AR		Massalski, T., "Binary Alloy Phase Diagrams", Vol. 1, American Society for Metals, Ohio 1986, pp. 18-19, 928-929, 936-937, 964-965.
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	AA	6,117,281	09-2000	Novbakbtian			
	AB	6,117,781	09-2000	Lukanc et al.			
	AC	6,117,782	09-2000	Lukanc et al.			
	AD	6,121,150	09-2000	Avanzino et al.			
	AE	6,121,685	09-2000	Gardner			
	AF	6,162,726	12-2000	Dubin			
	AG	6,197,433	03-2001	Hatano			
	AH	5,486,491	01-1996	Sengupta et al.			
	AI	5,590,389	12-1996	Dunlop et al.			
	AJ	6,451,135	09-2002	Takahashi			
	AK	6,478,902	11-2002	Koenigsmann et al.			

FOREIGN PATENT DOCUMENTS								
	Document Number	Date	Country	Class	Sub-class	Translation		
						Yes	No	
	AM	63064211	3/22/88	Japan				
	AN	63118033	5/23/88	Japan				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
	AR		Rossnagel, S., "Direction and Preferential Sputtering-Based Physical Vapor Deposition", Thin Solid Films 263 (1995), pp. 1-12.
	AS		Takewaki, T. et al., "Excellent Electro/Stress-Migration-Resistance Surface-Silicide Passivated Giant-Grain Cu-Mg Alloy Interconnect Technology for Giga Scale Integrations (GSI)", 1995 IEEE, pp. 10.5.1 - 10.5.4.
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	AA	4,814,053	03-1989	Shimokawato			
	AB	5,171,411	12-1992	Hillendahl et al.			
	AC	5,215,639	06-1993	Boys			
	AD	5,589,040	12-1996	Nishimura			
	AE	5,674,367	10-1997	Hunt et al.			
	AF	5,772,858	06-1998	Tepman			
	AG	5,833,823	11-1998	Gruenenfelder et al.			
	AH	6,579,467	06-2003	Li et al.			
	AI	6,451,222	09-2002	Li et al.			
	AJ	5,846,389	12-1998	Levine et al.			
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		Document Number	Date	Country	Class	Sub- class	Translation
							Yes No
	AM	01096374	04-1989	Japan			
	AN	01096376	10-1987	Japan			
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR		Haertling, G., "Hot-Pressed Ferroelectric Lead Zirconate Titanate Ceramics for Electro-Optical Applications", Ceramic Bulletin, Vol. 49, No. 6 (1970), pp. 564-567.				
	AS		Dierckxsens et al., "Effect of Trace Elements On the Recrystallization Behavior of High Purity Oxygen-Containing Copper", Erzmetall, (1975), 28(11), 496-500 (abstract only)				
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	AA	6,440,243	08-2002	Tan et al.				
	AB	6,139,701	10-2000	Pavate et al.				
	AC	5,693,203	12-1997	Ohhashi et al.				
	AD	6,113,761	09-2000	Kardokus et al.				
	AE	3,666,666	05-1972	Haertling				
	AF	3,923,675	12-1975	Mazdiyasni et al.				
	AG	6,277,254	08-2001	Tan et al.				
	AH	4,311,522	01-1982	Batra et al.				
	AI	6,238,494	05-2001	Segal				
	AJ	3,766,642	10-1973	Schlaudt et al.				
FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Sub-class	Translation	
							Yes	No
	AM	62036798 B4	08-1987	JP				
	AN	61227972 A2	10-1986	JP				
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)								
	AR	Pierson, K. et al., "Total Sputtering Yield of Ag/Cu Alloys for Low Energy Argon Ions", Nucl. Instrum. Methods Phys. Res., Sect. B (1996), Vol. 108(3), pp. 290-299.						
	AS	West, C., "International Critical Tables of Numerical Data, Physics, Chemistry and Technology", National Research Council of the USA, McGraw-Hill Book Co., Inc. 1933, 6 pages.						
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	AA	6,165,607	12-2000	Yamanobe et al.			
	AB	6,645,427	11-2003	Kardokus et al.			
	AC	6,331,234	12-2001	Kardokus et al.			
	AD	6,858,102	02-2005	Kardokus et al.			

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		Document Number	Date	Country	Class	Sub-class	Translation	
							Yes	No
	AE	49007777 B4	02-1974	JP				
	AF	11323539	11-1999	JP				
	AG	0441408 A2	08-1991	EPO				
	AH	1026284 A1	08-2000	EPO				
	AI	2000239836 A	09-2000	JP				
	AJ	62116743 A2	05-1987	JP				
	AK	11204524	07-1999	JP				
	AL	57056215 B4	11-1982	JP				
	AM	50077216 A2	06-1975	JP				
	AN	57145954 A2	09-1982	JP				
	AO	61084389 A2	04-1986	JP				

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
	AR		Yeon et al., "Electrical Characteristics of the MOD-derived SrBi ₂ xTa ₂ O ₉ and SrBi _{2.4} (TA,Nb) ₂ O ₉ Thin Films", Journal of Materials Science, 35(10), pgs. 2405-2411, May 15, 2000. Abstract only.
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							Yes	No
	AE							
	AF							
	AG							
	AH							
	AI							
	AJ							
	AK							
	AL							
	AM							

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
	AN		Reda et al., "Amorphous copper-silver films with high stability", Int. Cent. Theor. Phys., Trieste, Italy, 1983. (Abstract only) The year is sufficiently early so that the month is not in issue.
	AR		Yan et al., "Preparation on the [(Pb,Lu) (Zr,Ti)O ₃] Ferroelectric Thin Films by Using the Sol-Gel Processing", Piezoelectrics and Acoustooptics, Volume 17, issue n 5, October 1995, pgs. 24-27.
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